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NATIONAL ENERGY BOARD
REASONS FOR DECISION

In the Matter of an Application under
the National Energy Board Act

of

Cominco Ltd.

November 1982



Report and Appendices

NATIONAL ENERGY BOARD

REASONS FOR DECISION

In the Matter of an Application Under
The National Energy Board Act

of

COMINCO LTD.

November 1982

Ce rapport est publié
séparément dans les deux
langues officielles.

(i)

Recital and Appearances

IN THE MATTER OF the National Energy Board Act
and the Regulations made thereunder; and

IN THE MATTER OF an application by Cominco Ltd.
for Licences to export electric power and energy,
pursuant to Part VI of the said Act, filed with
the Board under File Number 1923-C26-5.

HEARD AT Vancouver, British Columbia on 7 October 1982

BEFORE:

J.L. Trudel)	Chairman
A.D. Hunt)	Member
A.B. Gilmour)	Member

APPEARANCES:

F.H.P. Dewdney)	Cominco Ltd.
T.D. Tutti)	
W.D. Mitchell)	British Columbia Hydro & Power Authority
P.G. Griffin)	Westcoast Transmission Company Limited
A.R. Macdonald)	National Energy Board

(ii)
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(iii)
Abbreviations

For Units of Measurement

"kv"	: kilovolt (1 thousand volts)
"kW.h"	: kilowatt hour (1 thousand watt hours)
"GW.h"	: gigawatt hour (1 million kilowatt hours)
"MW"	: megawatt (1 thousand kilowatts)

For Names

"Applicant", "Cominco"	: Cominco Ltd.
"B.C."	: British Columbia
"B.C. Hydro"	: British Columbia Hydro and Power Authority
"Board"	: National Energy Board
"BPA"	: Bonneville Power Administration
"Westcoast Transmission"	: Westcoast Transmission Company Ltd.
"WKPL"	: West Kootenay Power and Light Company Limited
"U.S."	: United States
"U.S.A."	: United States of America

CHAPTER 1 Background

Cominco Ltd., was incorporated under the Companies Act of Canada in 1906 and has its head office in Vancouver, British Columbia. The company is one of the world's major corporations in mining and fertilizer production; it has industrial operations at a number of locations in Canada and abroad. The controlling interest in Cominco is owned by Canadian Pacific Enterprises Limited, which is itself controlled by Canadian Pacific Limited.

In association with its industrial plants in southeastern British Columbia, Cominco owns hydroelectric generating facilities and an electric power system. West Kootenay Power and Light Company Limited, a wholly owned subsidiary of Cominco, is an electrical utility which owns certain power facilities and retails electricity in the area. Cominco and WKPL have an agreement whereby WKPL has complete use of a portion of Cominco's generating facilities and associated power system. The combined capacity of the Cominco and WKPL generating facilities is 705 MW (1) of which 504 MW is used by Cominco. Appendix 1 is a map of the systems comprising the generation and transmission in southeast British Columbia.

The Cominco system is interconnected with that of British Columbia Hydro & Power Authority in Canada and that of Bonneville Power Administration in the United States of America. The interconnection with BPA consists of a 230 kV transmission line which crosses the international boundary near Nelway, B.C. This international power line was authorized by the Board in 1963 under Certificate of Public Convenience and Necessity EC-III-1.

Cominco currently holds three licences for the export of power over its international interconnection. Licence EL-20 provides authority for exchange transfers of interruptible energy up to 500 GW.h per year; this licence came into effect in 1963 and terminates on 30 June 1983. Licence EL-104 authorizes the export of firm energy up to 50 GW.h in any consecutive 12-month period as a carrier transfer for wheeling through the United States and return to Canada via international power lines owned by B.C. Hydro. Licence EL-105 authorizes the export of interruptible energy to

1400 GW.h in any consecutive 12-month period. Licences EL-104 and EL-105 were issued by the Board in 1977 and are due to expire on 31 December 1982.

(1) Net generating capacity during Cominco's annual peak load.

CHAPTER 2

The Application

The application dated 12 March 1982 requested licences to allow Cominco to export power to the U.S.A. during the five-year period 1 January 1983 to 31 December 1987, as follows:

1. As a carrier transfer for return to Canada, up to a maximum of 50 GW.h in any consecutive 12-month period. This licence would succeed the existing licence EL-104.
2. As sale, equichange, storage or adjustment transfers of interruptible energy, up to a maximum of 1100 GW.h in any consecutive 12-month period. This licence would succeed EL-105 which has a maximum limit of 1400 GW.h.
3. As an equichange transfer of miscellaneous firm energy, up to a maximum of 250 GW.h in any consecutive 12-month period.
4. As an export of unscheduled circulating power and energy, up to a maximum of 1000 GW.h in any consecutive 12-month period, for simultaneous return to Canada. Cominco's circulating power and energy is presently reported under B.C. Hydro's loop power and energy flow Licence EL-127.

CHAPTER 3

The Evidence

POWER SUPPLY, LOAD AND SURPLUS

The Applicant submitted data on its system power supply, load and resulting surpluses, as summarized in Appendices 2 and 3.

Cominco owns five hydroelectric generating stations: the Waneta Plant on the Pend d'Oreille River and four plants on the Kootenay River. In addition, WKPL owns one hydro plant on the Kootenay River.

Cominco and WKPL have an agreement whereby WKPL has complete use of three of Cominco's generating stations. This agreement, called the Plant Use Agreement, was executed on 21 November 1980 and became effective 1 January 1981. Recently Cominco has entered into an agreement to sell these generating stations and related transmission facilities to WKPL. The application indicated that, whether or not the sale occurs for the requested licensing period, the power supply will be based only on those facilities actually owned and used by Cominco. These include the Brilliant and Waneta plants, a transmission system connecting these two plants to Cominco's industrial load centres at Trail and Kimberly and the international power line authorized by the Board's Certificate of Public Convenience and Necessity No. EC-III-1.

Even though the forecast indicates that after 1985 the Applicant will be unable to supply all its own energy requirements, no addition is planned to its generating facilities during the requested licence period. The Applicant explained that it anticipates negotiating a bulk energy purchase agreement with B.C. Hydro and failing this, would consider importing from interconnected U.S. utilities. The Applicant also stated that there may be additional energy available to it during deficit years arising from a reduction in purchases by WKPL.

The Canal Plant Agreement, which became effective on 1 August 1972, provides for the integrated operation of the facilities of B.C. Hydro, Cominco and WKPL. Part D of the Canal Plant Agreement provides that Cominco and WKPL, in return for allowing the diversion of their water, are entitled to specified monthly amounts of energy and capacity, subject to adjustment for machine outages. These monthly amounts are referred to in the agreement as the "Basic Supply" they total 4844 GW.h per year.

Thus, the effect of the Canal Plant Agreement provides the Applicant and WKPL with a fixed supply capability of 4844 GW.h per year, regardless of streamflow conditions. Should the output of their generating plants exceed this entitlement, the excess is absorbed by B.C. Hydro. Should the output be less than the entitlement, B.C. Hydro makes up the deficiency.

The application indicates that Cominco's share of the fixed entitlement is 3319 GW.h per year, which is the contribution of the Brilliant and Waneta plants to the "Basic Supply".

The agreements with WKPL for the sale of certain generating and transmission facilities and the sale of surplus power and energy are intended to supersede the present Plant Use Agreement. The Applicant has also entered into an agreement with WKPL called the Canal Plant Subagreement formally establishing Cominco's and WKPL's portions of the entitlement under the Canal Plant Agreement. The agreements covering the sale of generating and transmission facilities and the sale of surplus power and energy are subject to approval under the B.C. Utilities Commission Act — the Canal Plant Subagreement is conditional on the completion of the purchase and sale of the generating and transmitting facilities. On 28 July 1982 the B.C. Minister of Energy, Mines and Petroleum Resources issued an Order granting conditional approval to the agreements subject to Cominco obtaining an Energy Removal Certificate and complying with certain other conditions. The Applicant confirms that it is complying with all the conditions imposed by this Order and has received the Energy Removal Certificate issued on 27 September 1982 by the B.C. Minister of Energy, Mines and Petroleum Resources. The evidence shows that Cominco's share of the fixed entitlement under the Canal Plant Agreement would remain unchanged, regardless of whether or not the sale of plants described in these agreements, occurred.

In Appendix 3, lines 1 and 9 show the Applicant's portion of the basic capacity and energy entitlements provided by the Canal Plant Agreement. The capacity entitlement is somewhat less than the Applicant's average generating capacity given a repeat of streamflows during the period 1928-1957. The energy entitlement is somewhat less than the Applicant's average energy capability given the same streamflows. The Applicant explained that these basic entitlements

have been increased by the omission of the forecast maintenance deductions which were included in determining the entitlements under the Canal Plant Agreement. The actual maintenance deductions are included under lines 3 and 11. Line 11 also includes allowances for the use of the adjustment accounts under the Canal Plant Agreement.

Lines 2 and 10 show the forecast purchases by Cominco required to carry its firm load. Lines 4 and 12 show the total capacity and capability resources, taking purchases and adjustments into account.

Appendix 2 shows Cominco's firm load which consists of its own industrial demand at Trail and Kimberley. The Applicant's load forecast was developed based on anticipated future market conditions. The Sale of Surplus Power Agreement executed on 21 November 1980 provides that WKPL shall have first right to purchase any of Cominco's surplus power as it becomes available for resale within the WKPL service area. The Sale of Surplus Power Service and Exemption Order issued by the B.C. Minister of Energy, Mines and Petroleum Resources on 28 July 1982 modifies this Agreement by adding a requirement that Cominco sell up to 75 average annual MW (657 annual GW.h) of the surplus energy to WKPL as firm energy. In Appendix 3, lines 7 and 14 show WKPL's purchase under the Sale of Surplus Power Agreement.

In any month, a surplus of energy results if Cominco's energy entitlement exceeds the energy requirements of its firm load and WKPL's purchase under the Sale of Surplus Power Agreement. In Appendix 3, line 15 shows the monthly energy surpluses.

Even though the maximum anticipated annual surplus is 407 GW.h occurring in 1983, Cominco is requesting 1100 GW.h of authorized interruptible exports. The company stated that, under unusual occurrences such as a plant shutdown, an additional amount of energy over and above the anticipated surplus might be available for export. Cominco has estimated that 700 GW.h of additional surplus, based on a four-month shutdown of its Trail and Kimberley operations, is a reasonable additional amount to cover this eventuality.

CANADIAN MARKET FOR SURPLUS INTERRUPTIBLE ENERGY

The application indicates that there are only three possible customers in Canada for Cominco's interruptible energy: WKPL, B.C. Hydro and

Transalta Utilities Corporation. Anticipated transfers to WKPL have been dealt with in the previous section of the report.

The evidence shows that Cominco did not anticipate making any significant interruptible sales to either B.C. Hydro or Transalta Utilities Corporation during the requested licensing period. Cominco has made emergency sales to both of these utilities and will continue to do so. With the construction by B.C. Hydro of the 500 kV transmission line intertie from Langdon, Alberta to Cranbrook, B.C. scheduled for completion in 1984, the transfer capacity between B.C. and Alberta will increase by 800 MW. This could have an effect on sales to Transalta Utilities Corporation, although a witness for Cominco indicated it was unlikely.

To ensure that Cominco's exports of interruptible energy to the U.S.A. are surplus to Canadian requirements, the Applicant proposed to continue to follow existing procedures. All surplus is first offered to WKPL under the terms of the Sale of Surplus Power Agreement. If any of the surplus is not required by WKPL the export market is canvassed. Before any agreement for an interruptible export is confirmed by the Applicant, the energy is offered to interconnected Canadian utilities at the same net price and terms, taking account of differences in transportation charges of the proposed sale. All export sales are made on the condition that they can be pre-empted at any time to satisfy Canadian requirements.

EXPORT MARKET FOR SURPLUS INTERRUPTIBLE ENERGY

The Applicant is a member of the Northwest Power Pool and, as such, has access to markets for energy throughout the entire Pacific Northwest and Pacific Southwest areas of the United States. It has agreements with various U.S. utilities providing for international interchanges including interruptible sale, exchange and storage provisions. The evidence showed that any energy sales are scheduled on a daily basis to any of the utilities in this area. The market can vary widely, depending on water flows — from a position of no surplus and high prices during periods of low flows, to a position where BPA, an agency of the United States' government, is able to meet all interruptible markets during periods of high flows.

BPA owns the main high-voltage transmission system in the Pacific Northwest, and wheels the power sold by Cominco to the individual utilities.

STORAGE OF SURPLUS ENERGY

Evidence was given that Cominco arranges for the storage of energy in the form of water in BPA's reservoirs if it appears likely that the energy will be more useful or valuable at some future date. Storage is at the risk of the owner of the energy; if the reservoir fills and overflows, the stored energy is lost. The evidence indicated that the storage provision of EL-105 has been used occasionally in recent years.

EXPORT PRICES FOR SURPLUS ENERGY

The Northwest Power Pool has no formula for setting prices. The evidence shows that the price of surplus interruptible energy is determined by bargaining between utilities, the objective of the seller being to obtain the highest price that the market will bear. A witness for Cominco explained that he was constantly in touch with U.S. utilities and was knowledgeable as to who were buying and selling. He acknowledged that Cominco had occasionally lost sales through trying to keep up its prices although normally its price was set at either equal to or slightly under the highest market price.

The incremental cost of producing surplus hydroelectric energy for export includes an amount to cover the provincial water fees plus an amount to cover additional operating and maintenance costs associated with exports. The provincial water fee in 1982 is approximately 3.5 mills⁽¹⁾ per kW.h and the additional operations and maintenance costs are less than 1.0 mill per kW.h.

The application included the following summary of the average annual prices that Cominco has obtained for its sales of energy in the United States.

<u>Year</u>	<u>Average Price</u> (mills/kW.h, \$U.S.)
1977	22.0
1978	13.3
1979	23.4
1980	35.3
1981	31.3

The application indicated that in 1981 the price varied from 5 to 40 mills per kW.h (\$U.S.) depending on market conditions.

(1) 1 mill is equivalent to 1 thousandth (1/1000) of 1 dollar.

Cominco confirmed that exportable energy was always available to B.C. Hydro and Transalta Utilities Corporation at the proposed export price.

MISCELLANEOUS FIRM EQUICHANGE

Cominco stated that firm equichange would provide the company with back-up to shape its resource to its load. Through equichanges with other utilities Cominco would transfer energy from surplus months to deficit months, which would provide a basis for industrial expansion and increased employment in Canada. A firm rather than interruptible equichange is requested as the Applicant would be providing for the growth of firm industrial load and, therefore, would need a guaranteed, non-interruptible supply.

The Applicant indicated that the energy would be exported during months when Cominco had a surplus and imported during months when it had a deficit of energy to supply its firm load. The amount requested includes a contingency amount of 50 GW.h and an additional 200 GW.h which is the approximate maximum amount of equichange required to match the Applicant's load profile to its resource profile, using its resources to the fullest.

Cominco is presently negotiating the terms of equichange agreements with BPA and several other U.S. utilities. In addition, B.C. Hydro has been approached with the basic framework of an equichange agreement and is considering the proposal. Once a basic agreement, or an understanding towards an agreement, for firm equichange with a U.S. utility had been developed, Cominco would propose a similar agreement to B.C. Hydro. If a satisfactory agreement with B.C. Hydro was arranged, further discussions with the U.S. utility would be abandoned. The Applicant proposed that each agreement for firm equichange with a U.S. utility would be subject to approval by the Board.

The Applicant filed a draft equichange agreement between BPA and Cominco during the hearing. The agreement provides for four-year planning of schedules for firm equichange transfers. Cominco would pay either 2 mills per kW.h (\$U.S.) or 7.5 mills per kW.h (\$U.S.) for equichange service depending on whether BPA first delivered energy for later return by Cominco or Cominco first delivered energy for later return by BPA. The difference in charges was due to the increased risk of water spillage borne by BPA in the case where Cominco first delivered energy for later return by BPA. The agreement provides for all energy exchanges being completed by April 15 of each year or alternatively the re-scheduling of a

planned delivery or return of energy to a mutually agreeable time prior to the end of the "Critical Period". This Critical Period would be based on the lowest flow period in 40 years of historical record for the major utilities which are party to the Pacific Northwest Coordination Agreement. The draft agreement had no provision for dealing with a situation where there was not a zero balance in the exchange energy account before the end of the year or of the Critical Period.

UNSCHEDULED CIRCULATING POWER AND ENERGY

The Applicant is requesting a licence to export unscheduled circulating power and energy, up to a maximum of 1000 GW.h in any consecutive 12-month period, for simultaneous return to Canada. These flows are presently reported under B.C. Hydro licences. Cominco is requesting its own licence so that it can simplify reporting and because it would be more appropriate for Cominco rather than B.C. Hydro to report Cominco's unscheduled flows. Although 600 GW.h is adequate for present levels of circulating power and energy, a licence limit of 1000 GW.h is requested to provide some reserve for future increases.

ENVIRONMENTAL IMPACT

The application indicates that there will be no measurable environmental impact resulting from the generation or transmission of energy for export since the operation of the Applicant's and B.C. Hydro's power systems will not be different with or without exports. No additions or changes to the Applicant's generation or transmission systems are planned. Any exports would be dependent on the surplus arising out of the Applicant's normal entitlement under the Canal Plant Agreement or would be due to a plant shutdown.

CHAPTER 4

Interventions

Two parties intervened at the hearing: The British Columbia Hydro and Power Authority and Westcoast Transmission Company Limited. Neither party called witnesses but both presented argument and Westcoast Transmission cross-examined the Applicant's witnesses.

THE BRITISH COLUMBIA HYDRO AND POWER AUTHORITY

Counsel for B.C. Hydro stated that B.C. Hydro was not opposing the licence requests and was intervening only to inform the Board of a difference of opinion between B.C. Hydro and Cominco respecting the interpretation of the Canal Plant Agreement. The permissible use of adjustment accounts under sections 4.1 and 4.2 of Part D of the Canal Plant Agreement were in dispute. This difference of opinion could affect the quantity of Cominco's entitlement. The amount of power in question amounts to plus or minus 50 GW.h, and court action has been initiated by B.C. Hydro to settle the dispute.

WESTCOAST TRANSMISSION COMPANY LIMITED

Counsel for Westcoast Transmission stated that Westcoast Transmission was not opposing the granting of licences to Cominco but was concerned with the effect low electricity export prices could have on sales of natural gas. It was argued that on an energy-equivalent basis, the interruptible electric energy being sold into the Pacific Northwest market was sold at prices considerably lower than those charged for natural gas. Permitting exports of electricity on an energy-equivalent basis at prices which were lower than those of gas would create a situation where there was the potential for erosion of the natural gas markets. Counsel conceded that although there was a distinction between interruptible electricity exports and firm natural gas exports, interruptible electricity exports were sales of relatively long duration even though they were interruptible. He stated that the relative revenues of the Province of British Columbia from natural gas sales were substantially higher than from electricity sales. In the case of exports of electricity, the water licence fee amounts to 3.5 mills per kW.h or approximately \$1.03 per million British thermal units compared to the revenue to the Province with respect to exports of natural gas of approximately \$4.00 per million British thermal

units. Since it was in the public interest to maximize revenues to Canada and the provinces, it was argued that, in order to prevent exports of interruptible electric energy from gaining a price advantage relative to natural gas and thus eroding the natural gas market, any interruptible electricity export licence granted by the Board should be conditioned to set a minimum or floor price. A minimum price determined on an energy-equivalent basis of approximately 20 mills per kW.h (\$CAN) was suggested by Westcoast Transmission.

CHAPTER 5

Disposition

The Board has given careful consideration to all the evidence, submissions and arguments presented.

Section 83 of the Act requires the Board, in hearing an application for an export licence, to have regard to all considerations that appear to it to be relevant. In particular, the Board is required to satisfy itself that the quantity of power to be exported is surplus to reasonably foreseeable Canadian requirements and that the price to be charged is just and reasonable in relation to the public interest. The Board has therefore examined the evidence on the basis of these provisions.

Part 1 of the application is for the export of power as a carrier transfer for wheeling through the United States and return to Canada. As this power would be exported and simultaneously imported elsewhere, no question arises as to its surplus nature and it bears no export price. The licence now requested for up to 50 GW.h in any consecutive 12-month period would be for use only during interruption of the normal Canadian interconnections.

Part 2 of the application is for the export of interruptible energy as sale, exchange, storage or adjustment transfers up to a maximum quantity of 1100 GW.h in any consecutive 12-month period. The evidence shows that under normal conditions the Applicant's maximum annual energy surplus during the 5-year period is forecast to be 407 GW.h. On the basis of the Applicant's experience, unforeseeable circumstances could make available a considerable additional quantity of energy. A four-month shutdown could result in an additional surplus of about 700 GW.h. While some of any such surplus would possibly be saleable to B.C. Hydro and Transalta Utilities Corporation Ltd., the requested 1100 GW.h of interruptible energy per consecutive 12-month period is reasonable as an upper limit.

The Board recognizes that the Applicant's actual surpluses could be affected by the outcome of the dispute between the Applicant and B.C. Hydro concerning the adjustment clauses of the Canal Plant Agreement. Considering the relatively small amount of energy involved and the fact that the Applicant's proposed licence limit is to a large degree based upon the possibility of energy being made available through unusual circumstances such as a plant shutdown, the Board is satisfied

that the outcome of this dispute is of little consequence to the application.

It has been established in evidence that the approval of the proposed export would not lead to the construction or expansion of generating facilities by Cominco.

In the past the Applicant has met the Board's requirements in making its surplus energy available to Canadian utilities before exporting it, and in interrupting the export whenever called upon to do so to meet Canadian needs. The Board has no reason to doubt that, within the term of the licences applied for, Cominco will continue to have small surpluses of energy in at least some months of each year, for which there will be no market in Canada.

The evidence shows that the export prices meet the first of the Board's three price criteria, namely that the prices shall cover fully the cost of producing the energy. The second criterion, that the price shall be no less than the prices charged to Canadians for comparable service, is met by the fact that before any agreement for interruptible export is confirmed by Cominco, the energy is offered to interconnected Canadian utilities at the same net price and terms, taking account of differences in transportation charges for the proposed sales. In addition to this, all surplus is first offered to WKPL under the terms of the Sale of Surplus Power Agreement. In 1982 WKPL paid 11.6 mills per kW.h for Cominco's surplus energy which is approximately one third of Cominco's average 1981 price for interruptible export sales.

The third price criterion, that the price is not materially less than the least cost alternative in the export market, is met by Cominco's success in keeping its prices high. From the testimony it is evident that Cominco has occasionally lost sales through trying to keep its price up although normally its price is set at either equal to or slightly under the highest market price. The statistics of average annual prices for surplus hydroelectric energy show that Cominco has succeeded in keeping its prices high.

Because the price for energy traded between utilities in the Northwest Power Pool is set for each individual transaction by bargaining, there exists no set of pre-established price schedules

similar to those forming part of most eastern power pool agreements. In accepting Cominco's pricing procedures, the Board is relying on the Company's past performance and on the fact that the Board monitors the export transactions monthly as to both quantity and price.

The Board is satisfied that the export prices meet the three criteria and that they are and will continue to be just and reasonable in relation to the public interest.

Westcoast Transmission suggested that the Board should condition any interruptible export licence it might grant to the Applicant to set a floor price below which sales would not be authorized. It was argued that since revenues to the Province from natural gas sales were substantially higher than revenues from interruptible electricity sales it was in the public interest for the Board to prevent erosion of the natural gas market by setting a minimum export price for electricity exports.

Westcoast Transmission compared interruptible electricity exports to firm natural gas exports. The Board does not accept the argument that interruptible electricity exports are "firm" in the sense that they may be available for up to 30 days or more. The fact that they are interruptible at any time by other Canadian utilities invalidates, in the Board's view, the comparability with firm exports of natural gas.

Westcoast Transmission stated that the effect of lower priced electricity exports is to create a situation where there is the potential for the erosion of the natural gas market. Counsel for Westcoast Transmission did not call witnesses to give evidence to this effect. It is the Board's view that Westcoast Transmission's argument in this regard is unsubstantiated.

The fact that hydroelectricity is renewable unlike natural gas is an important consideration in the Board's view. In addition, during periods of high water levels if surplus electric energy is not exported due to uncompetitive pricing, the water may have to be spilled and the possible revenue is lost forever.

For these reasons the Board rejects Westcoast Transmission's suggestion of a minimum floor price for interruptible electricity exports.

Part 3 of the application is for the export of up to 250 GW.h of firm energy as an equichange transfer of miscellaneous firm energy. Cominco proposes to use firm equichange to shape its resource to its load at a time when its loads will have increased to the point where its annual load is equal to its annual entitlement. It has requested the licence

to allow for back-up for future load growth and as a basis for possible industrial expansion. A witness testified that a firm equichange agreement could provide a similar benefit to WKPL. Cominco has stated that any proposed agreements for firm equichange with U.S. utilities would first be offered to Canadian utilities on the same terms and would be subject to approval by the Board.

Since the purpose of this request is to provide contingency capability to meet a potential increased load and the energy would normally be returned in the same year, the Board does not consider the surplus question to be an issue. Cominco would be unable to export under a firm equichange agreement if it did not have surplus energy to satisfy its obligations at the time. The fact that accessible Canadian utilities would be given the opportunity to consider any potential equichange agreements before they were finalized provides an assurance that Canadians would be given first priority. The Board accepts the Applicant's argument that equichange agreements must be firm in order to provide a firm supply for the growth or expansion of its industrial load.

The Board notes that the draft equichange agreement with BPA submitted at the hearing had no provision for dealing with a situation where the balance in the exchange energy account was not zero at the end of the exchange year or at the end of a Critical Period. The Board will expect that any equichange agreements submitted for approval include provisions for disposition of any non-zero energy balance.

The Board reserves its decision on the acceptability of proposed service charges to be paid by Cominco to its equichange partner under any proposed firm equichange agreement until that agreement is submitted for approval.

Part 4 of the application is for the export of up to 1000 GW.h of unscheduled circulating power and energy in any consecutive 12-month period, for simultaneous return to Canada. Unscheduled circulating power and energy transfers involve equal and simultaneous exports and imports, with no final net transfer of energy. No question arises as to their surplus nature; furthermore they bear no export price. They are a necessary part of any multiple interconnected power system. The amount of 1000 GW.h requested appears reasonable.

Turning now to other considerations that appear to be relevant, the evidence indicates a number of advantages that would be associated with the requested exports. Under Part 1, the wheeling of power through the BPA system would provide an emergency backup circuit for the direct interties


between Cominco and B.C. Hydro. Under Part 2, the sale transfers would provide the Applicant with additional revenue, and would increase Canada's foreign exchange funds from the sale of energy derived from water that might otherwise be spilled over the dams. The equichange and storage transfers proposed under Part 2 would improve the economy of operation of the Cominco power system. The adjustment transfers would be required to compensate for inadvertent over-deliveries or under-deliveries of energy and to repay BPA for services such as the wheeling of Canadian power. Finally, Cominco's ability to export power to utilities in the Northwest Power Pool enhances its ability to obtain emergency assistance from these same utilities, thus improving the security of supply to Canadian customers. Under Part 3 not only would Cominco be provided with the opportunity for industrial expansion through firm equichanges with U.S. utilities, but in addition these equichanges could be of benefit to WKPL. Finally Part 4 would allow Cominco to report its own unscheduled flows, rather than reporting them through B.C. Hydro.

The Board accepts the Applicant's statement that there will be no measurable environmental impact resulting from the generation or transmission of energy for export since the operation of the Applicant's and B.C. Hydro's power systems will not be different with or without exports.


Accordingly, having had regard to all the considerations that appear to be relevant, and in

particular having established that the quantity of energy to be exported is surplus to reasonably foreseeable Canadian requirements and that the prices to be charged are just and reasonable in relation to the public interest the Board finds the export to be in the public interest. Accordingly, the Board is prepared to issue export licences as follows:

1. A licence to export energy as a carrier transfer for return to Canada, up to a maximum quantity of 50 GW.h in any consecutive 12-month period. Applicable terms and conditions are set out in Appendix 4.
2. A licence to export as sale, equichange, storage or adjustment transfers of interruptible energy, up to a maximum quantity of 1100 GW.h in any consecutive 12-month period. Applicable terms and conditions are set out in Appendix 5.
3. A licence to export as an equichange transfer of miscellaneous firm energy, up to a maximum quantity of 250 GW.h in any consecutive 12-month period. Applicable terms and conditions are set out in Appendix 6.
4. A licence to export unscheduled circulating power and energy, up to a maximum of 1000 GW.h in any consecutive 12-month period, for simultaneous return to Canada. Applicable terms and conditions are set out in Appendix 7.


J.L. Trudel
Presiding Member

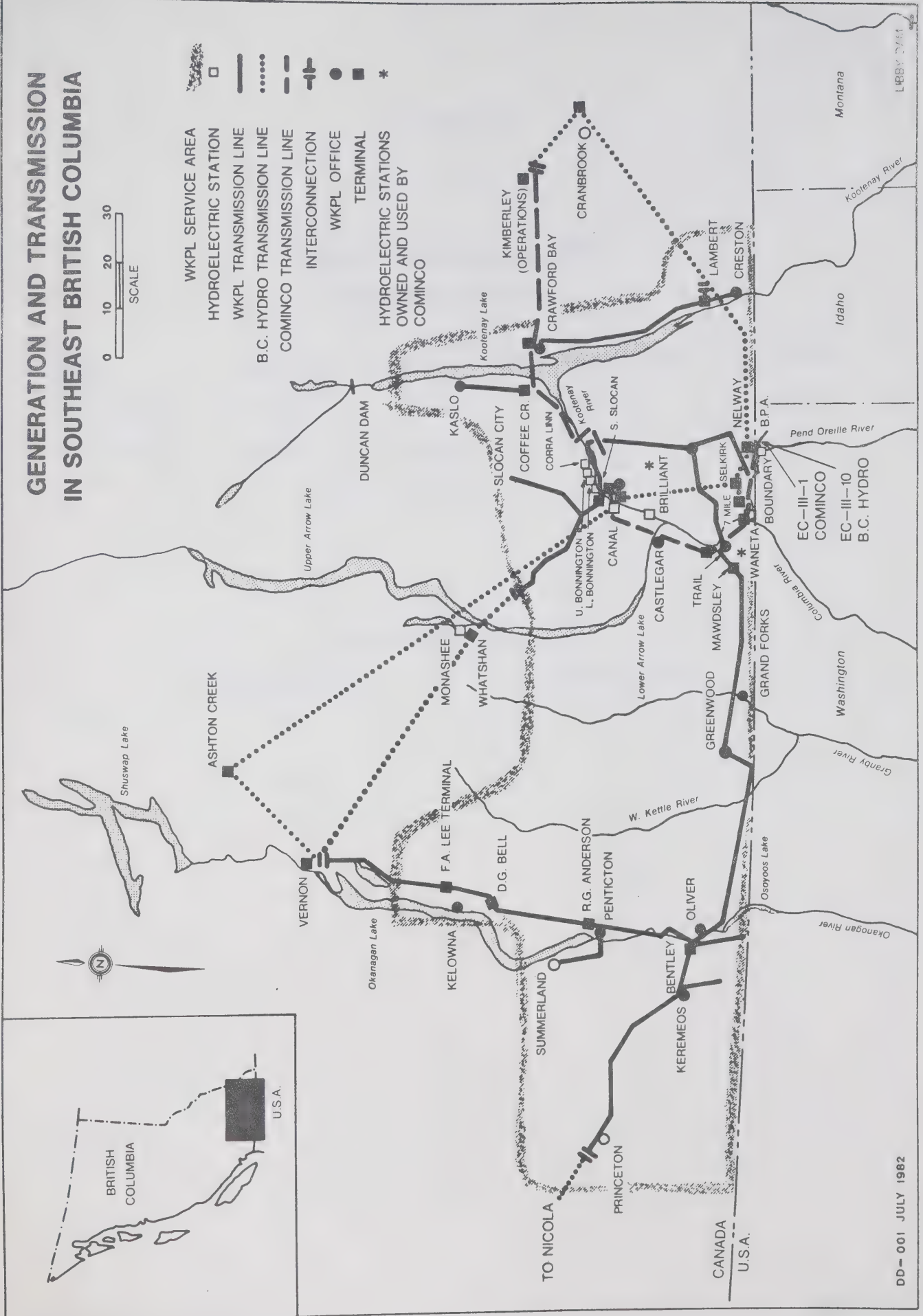

A.D. Hunt
Member


A.B. Gilmour
Member

APPENDICES

GENERATION AND TRANSMISSION IN SOUTHEAST BRITISH COLUMBIA

- WKPL SERVICE AREA
- HYDROELECTRIC STATION
- WKPL TRANSMISSION LINE
- B.C. HYDRO TRANSMISSION LINE
- COMINCO TRANSMISSION LINE
- INTERCONNECTION
- WKPL OFFICE
- TERMINAL
- HYDROELECTRIC STATIONS OWNED AND USED BY COMINCO



APPENDIX 2

COMINCO'S GENERATION AND DEMAND

GENERATING FACILITIES

<u>Name</u>	<u>Location</u>	<u>Nameplate Capacity (MW)</u>	<u>Maximum Capacity (MW)</u>	<u>1st year of service</u>
No. 5 Plant	Brilliant	108.8	129	1944
No. 6 Plant	Waneta	<u>288.0</u>	<u>375</u>	1955
	Total	396.8	504	

FIRM INDUSTRIAL DEMAND

<u>Year</u>	<u>FIRM POWER DEMAND*</u> (MW)	<u>FIRM ENERGY LOAD</u> (GW.h)
1983	285	2174
1984	309	2340
1985	316	2420
1986	357	2759
1987	367	2840

* Annual Peak Demand

COMINCO
Power Capacity, Demand and Surplus

(MW)

Year 1983	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1. Capacity Entitlement	504	504	503	497	479	473	491	500	500	500	502	503
2. Contract Purchase	0	0	0	0	0	0	0	0	0	0	0	0
3. Adjustments	0	0	-32	0	0	0	0	-94	-94	0	0	0
4. Total Capacity Resources	504	504	471	497	479	473	491	406	406	500	502	503
5. Peak Demand	285	277	272	261	255	249	241	233	249	261	267	277
6. Reserve Requirement	23	23	21	22	21	21	22	18	18	22	23	23
7. W.K.P.L. Purchase from Cominco	196	204	178	188	163	173	185	149	139	199	212	203
8. Capacity Surplus	0	0	0	26	40	30	43	6	0	18	0	0

Energy Capacity, Load and Surplus

(GW.h)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL
9. Capability Entitlement	262	242	281	303	330	302	303	216	198	287	301	303	3328
10. Contract Purchase	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Adjustments	18	16	4	-62	0	0	0	-23	0	28	-20	-15	-54
12. Total Capability	280	258	285	241	330	302	303	193	198	315	281	288	3274
13. Energy Load	202	177	193	179	181	171	171	165	171	185	183	196	2174
14. W.K.P.L. Purchase from Cominco	78	81	92	62	31	40	34	28	13	44	98	92	693
15. Energy Surplus	0	0	0	0	118	91	98	0	14	86	0	0	407

Notes: A - Rows (1) and (9) indicate the Applicant's basic capacity and energy entitlements as provided by the Canal Plant Agreement prior to adjustments.

B - Rows (2) and (10) indicate the purchases required by the Applicant to carry its firm load.

C - Rows (3) and (11) include allowances for maintenance outages and use of the adjustment accounts under the Canal Plant Agreement.

D - The total of lines (9) and (11) makes up Cominco's entitlement under the Canal Plant Subagreement.

The average of these totals exceeds the basic annual entitlement of 3328 GW.h because of a net gain from the use of the adjustment accounts over this period.

E - Rows (7) and (14) indicate WKP&L purchase per Sale of Surplus Power & Exemption Order dated 28 July 1982.

DOMINICO

Power Capacity, Demand and Surplus
(MW)

Year 1984 (Leap Year)	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1. Capacity Entitlement	504	504	503	497	479	473	491	500	500	500	502	503
2. Contract Purchase	0	0	0	0	0	0	0	0	0	0	0	0
3. Adjustments	0	0	-32	0	0	0	0	-94	-94	0	0	0
4. Total Capacity Resources	504	504	471	497	479	473	491	406	406	500	502	503
5. Peak Demand	309	302	296	284	278	271	263	253	271	284	290	299
6. Reserve Requirement	23	23	21	22	21	21	22	18	18	22	23	23
7. W.K.P.L. Purchase from Cominco	172	179	154	191	180	181	206	135	117	194	189	181
8. Capacity Surplus	0	0	0	0	0	0	0	0	0	0	0	0

Energy Capability, Load and Surplus
(GW.h)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL
9. Capacity Entitlement	262	251	281	303	330	302	303	216	198	287	301	303	3337
10. Contract Purchase	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Adjustments	25	17	25	-37	0	0	0	-7	8	-7	-20	-15	-11
12. Total Capability	287	268	306	266	330	302	303	209	206	280	281	288	3326
13. Energy Load	219	200	210	195	197	186	186	179	186	201	199	212	2370
14. W.K.P.L. Purchase from Cominco	68	68	96	71	41	50	46	30	20	79	82	76	727
15. Energy Surplus	0	0	0	0	92	66	71	0	0	0	0	0	229

Notes: Refer to page 1 of this appendix.

COMINCO

Power Capacity, Demand and Surplus
(MW)

Year 1985	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1. Capacity Entitlement	504	504	503	497	479	473	491	500	500	500	502	503
2. Contract Purchase	0	0	0	0	0	0	0	0	0	0	0	0
3. Adjustments	0	0	-32	0	0	0	0	-94	-94	0	0	0
4. Total Capacity Resources	504	504	471	497	479	473	491	406	406	500	502	503
5. Peak Demand	316	308	303	291	285	277	268	260	279	291	297	306
6. Reserve Requirement	23	23	21	22	21	21	22	18	18	22	23	23
7. W.K.P.L. Purchase from Cominco	165	173	147	184	173	175	201	128	109	187	182	174
8. Capacity Surplus	0	0	0	0	0	0	0	0	0	0	0	0

Energy Capability, Load and Surplus

	(GW,h)												TOTAL
9. Capability Entitlement	262	242	281	303	330	302	303	216	198	287	301	303	3328
10. Contract Purchase	0	0	0	0	0	0	0	0	0	0	0	0	0
11. Adjustments	25	17	39	-26	0	0	0	-11	2	-13	-20	-15	-2
12. Total Capability	287	259	320	277	330	302	303	205	200	274	281	288	3326
13. Energy Load	224	197	215	200	202	190	190	184	191	206	204	217	2420
14. W.K.P.L. Purchase from Cominco	63	62	105	77	52	60	56	21	9	68	77	71	721
15. Energy Surplus	0	0	0	0	76	52	57	0	0	0	0	0	185

Notes: Refer to page 1 of this appendix.

COMINCO
Power Capacity, Demand and Surplus
(MW)

Year 1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1. Capacity Entitlement	504	504	503	497	479	473	491	500	500	500	502	503
2. Contract Purchase	0	0	0	0	0	0	0	0	0	0	0	0
3. Adjustments	0	0	-32	0	0	0	0	-94	-94	0	0	0
4. Total Capacity Resources	504	504	471	497	479	473	491	406	406	500	502	503
5. Peak Demand	357	348	344	332	327	321	310	298	318	330	337	346
6. Reserve Requirement	23	23	21	22	21	21	22	18	18	22	23	23
7. W.K.P.L. Purchase from Cominco	124	133	106	143	131	131	159	90	70	148	142	134
8. Capacity Surplus	0	0	0	0	0	0	0	0	0	0	0	0

Energy Capability, Load and Surplus (GWh)													TOTAL
9. Capability Entitlement	262	242	281	303	330	302	303	216	198	287	301	303	3328
10. Contract Purchase	0	0	0	0	24	24	24	0	0	0	0	0	72
11. Adjustments	18	17	17	0	0	0	0	-5	-20	-16	-20	-15	16
12. Total Capability	280	259	298	303	354	326	327	211	218	271	281	288	3416
13. Energy Load	253	223	244	228	232	220	220	211	218	234	231	245	2759
14. W.K.P.L. Purchase from Cominco	27	36	54	75	122	106	107	0	0	37	50	43	657
15. Energy Surplus	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes: Refer to page 1 of this appendix.

COMINCO
Power Capacity, Demand and Surplus

(MW)

Year 1987	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1. Capacity Entitlement	504	504	503	497	479	473	491	500	500	500	502	503
2. Contract Purchase	0	0	0	0	0	0	0	0	0	0	0	0
3. Adjustments	0	0	-32	0	0	0	0	-94	-94	0	0	0
4. Total Capacity Resources	504	504	471	497	479	473	491	406	406	500	502	503
5. Peak Demand	367	358	354	343	337	329	320	308	328	340	345	356
6. Reserve Requirement	23	23	21	22	21	21	22	18	18	22	23	23
7. W.K.P.L. Purchase from Cominco	114	123	96	132	121	123	149	80	60	138	134	124
8. Capacity Surplus	0	0	0	0	0	0	0	0	0	0	0	0

Energy Capability, Load and Surplus

(GW.h)

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	TOTAL
9. Capability Entitlement	262	242	281	303	330	302	303	216	198	287	301	303	3328
10. Contract Purchase	0	0	0	0	54	54	54	0	0	0	0	0	162
11. Adjustments	18	17	2	-6	0	0	0	2	27	-18	-20	-15	7
12. Total Capability	280	259	283	297	384	356	357	218	225	269	281	288	3497
13. Energy Load	260	229	251	235	239	226	227	218	225	241	237	252	2840
14. W.K.P.L. Purchase from Cominco	20	30	32	62	145	130	130	0	0	28	44	36	657
15. Energy Surplus	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes: Refer to page 1 of this appendix.

APPENDIX 4

TERMS AND CONDITIONS OF EXPORT LICENCE

PART I - CARRIER TRANSFERS

1. The term of this licence shall commence on the 1st day of January 1983 and shall end on the 31st day of December 1987.
2. The class of inter-utility export transfer authorized hereunder is the firm carrier transfer of energy for wheeling through the United States and simultaneous return to Canada.
3. The energy to be exported hereunder shall be transmitted over any international power line for which a Certificate of Public Convenience and Necessity issued under the National Energy Board Act is in effect.
4. The quantity of energy that may be exported hereunder shall not exceed 50 gigawatt hours in any consecutive 12-month period.
5. The Licensee shall not, without the prior approval of the Board, amend, enter into any agreement in substitution for or in addition to, or terminate, the Transmission Agreement, Contract No. EY-78-Y-83-0004 dated the 5th day of April, 1978, between the Licensee and the Bonneville Power Administrator, as amended to the date of issue of this licence.
6. The Licensee shall, within 15 days after the end of each month comprised in the term of this licence, file with the Board a report in such form and detail as the Board may specify, pertaining to transactions under the licence in that month.

APPENDIX 5

TERMS AND CONDITIONS OF EXPORT LICENCE

PART 2 - INTERRUPTIBLE TRANSFERS

1. The term of this licence shall commence on the 1st day of January 1983 and shall end on the 31st day of December 1987.
2. The classes of inter-utility export transfers authorized hereunder are sale, equichange, storage and adjustment transfers of interruptible energy.
3. The energy to be exported hereunder shall be transmitted over any international power line for which a Certificate of Public Convenience and Necessity issued under the National Energy Board Act is in effect.
4. The quantity of energy that may be exported hereunder shall not exceed
 - (a) in the calendar year 1983, 1100 gigawatt hours less the amount of exports under Export Licence EL-20 during that year, and
 - (b) in any consecutive 12-month period thereafter, 1100 gigawatt hours.
5. The Licensee shall not export energy hereunder unless it is surplus to the firm energy requirements of economically accessible Canadian markets at the time it is exported.
6. The Licensee shall interrupt or curtail the delivery of energy hereunder whenever or to whatever extent such energy is required to supply
 - (a) any firm load within Canada, or
 - (b) any Canadian electrical utility willing to buy part or all of the energy at the same price as that of the export adjusted for any difference in the cost of delivery.
7. The Licensee shall not, without the prior approval of the Board, amend, enter into any agreement in substitution for or in addition to, or terminate the Transmission Agreement, Contract No. EY-78-Y-83-0004 dated the 5th day of April, 1978, between the Licensee and the Bonneville Power Administrator, as amended to the date of issue of this licence.

APPENDIX 5 (Cont'd)

8. The Licensee shall not, without prior approval of the Board, amend, enter into any agreement in substitution for, or in addition to, or terminate, the Exchange Agreement, Contract No. 14-03-84714 dated the 6th day of May 1969, between the Licensee and the Bonneville Power Administrator, as amended to the date of issue of this licence, except that any amendment to the rate schedules attached as Exhibits A and B to the Exchange Agreement shall be filed promptly with the Board but shall not require the approval of the Board.
9. The Licensee shall file with the Board, forthwith upon the execution thereof, a copy of any written agreement entered into with any person in the United States of America for the sale of interruptible energy.
10. The Licensee shall, within 15 days after the end of each month comprised in the term of this licence, file with the Board a report in such form and detail as the Board may specify, pertaining to transactions under the licence in that month.

APPENDIX 6

TERMS AND CONDITIONS OF EXPORT LICENCE PART 3 - MISCELLANEOUS FIRM EQUICHANGE

1. The term of this licence shall commence on the 1st day of January 1983 and shall end on the 31st day of December 1987.
2. The class of inter-utility export transfer authorized hereunder is the equichange transfer of firm energy.
3. The energy to be exported hereunder shall be transmitted over any international power line for which a Certificate of Public Convenience and Necessity issued under the National Energy Board Act is in effect.
4. The quantity of energy that may be exported hereunder shall not exceed 250 gigawatt hours in any consecutive 12-month period.
5. The Licensee, before committing any block of energy for export hereunder, shall submit to the Board for its approval, an estimate, in such form and detail as the Board may specify, of the supply, demand and surplus of power and energy on its system for each month of the term of the proposed export.
6. The Licensee, before committing any block of energy for export hereunder, shall submit the proposed equichange agreement to the Board for its approval, together with such other information as the Board may require, and shall not commence exporting under that agreement until such approval is obtained from the Board.
7. The Licensee shall, within 15 days after the end of each month comprised in the term of this licence, file with the Board a report in such form and detail as the Board may specify, pertaining to transactions under the licence in that month.

APPENDIX 7

TERMS AND CONDITIONS OF EXPORT LICENCE

PART 4 - CIRCULATING POWER

1. The term of this licence shall commence on the 1st day of January 1983 and shall end on the 31st day of December 1987.
2. The class of inter-utility export transfer authorized hereunder is the carrier transfer of circulating loop power and energy flow for simultaneous return to Canada.
3. The power and energy to be exported hereunder shall be transmitted over any international power line for which a Certificate of Public Convenience and Necessity issued under the National Energy Board Act is in effect.
4. The quantity of energy that may be exported hereunder shall not exceed 1000 gigawatt hours in any consecutive 12-month period.
5. The Licensee shall, within 15 days after the end of each month comprised in the term of this licence, file with the Board a report in such form and detail as the Board may specify, pertaining to transactions under the licence in that month.

